

EJECTOR BASED ENGINES

ABSTRACT OF THE DISCLOSURE

[0052] The ejector based engine is, as an example in an ejector ramjet engine, a propulsion duct having normal augmented ramjet elements of an inlet, mixer, diffuser, combustor and exit nozzle that allow operating velocities from zero to hypersonic. At the upstream end of the mixer an injector assembly is mounted in the fluid flow path to form an ejector. The injector assembly has one or more injector rings which have alternatively offset injector exhaust nozzles or slots to direct fluid toward the engine internal wall or the engine longitudinal axis respectively to improve fluid mixing for use of a shorter mixer section. The supply of fluid to the injector exhaust nozzles may be by fuel flow pumps and other elements connected to injector chambers in the injector ring or by an injector combustor external to the mixer.